



# RAAJDHANI ENGINEERING COLLEGE, BHUBANESWAR

## Department of Civil Engineering

### LESSONPLAN

Session: **2023-2024**

<b>Discipline:</b> Civil Engineering	<b>Semester:</b> 6 <sup>th</sup>	<b>Name of the Teaching Faculty:</b> Prof. ACHINTYA SAHOO
<b>Subject:</b> Concrete Technology	<b>No. Of Days/Week:</b> 5	<b>Session :</b> March 2024- Aug 2024

Week	Class /Day	Theory/Practical Topics	References
1st	1st	Concrete as a construction material Grades of concrete.	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Advantages and disadvantages of concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Cement: Composition, hydration of cement	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Water cement ratio, compressive strength, and fineness of cement	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
2nd	1st	Setting time, soundness,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Types of cement	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Aggregate, Introduction, Classification	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Characteristics of aggregate, fineness modulus	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
3rd	1st	Grading of aggregate,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Quality of water for mixing and curing	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Impurities present in water	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Introduction, Important functions, classification of admixtures,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>

4th	1st	Accelerating admixtures, retarding admixtures, water reducing admixtures, air containing admixtures	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Concept of fresh concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Workability, factors affecting workability	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Slump test, compacting factor test	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
5th	1st	V-bee consistency test and flow test,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Requirement of workability,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Properties of hardened concrete Introduction	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Cube and cylinder compressive strengths	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
6th	1st	Flexural strength of concrete, stress-strain and elasticity	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Phenomena of creep and shrinkage, permeability	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Durability of concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Sulphate, chloride and acid attack on concrete, efflorescence.	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
7th	1st	Quiz Test	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Concrete mix Design introduction	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Data or input required for mix design	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Nominal mix concrete & design mix concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
8th	1st	Basic consideration for concrete mix design, Methods of proportioning concrete mix I.S. Code method of mix design(I.S.10262)	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Production of concrete Batching of materials,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Mixing of concrete materials, transportation, placing of concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Compaction of concrete(vibrators), Curing of concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
9th	1st	Formwork-requirements	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>

	2nd	Formwork types,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Stripping of forms	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Doubt Clearing class	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
10 <sup>th</sup>	1st	Inspection and Quality Control of Concrete Quality control of Concrete as per I.S.456	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Factors causing the variations in the quality of concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Mixing, Transporting, Placing & curing requirements of Concrete as per I.S.456	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Inspection and Testing as per Clause 17 of IS:456	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
11 <sup>th</sup>	1st	Durability requirements of Concrete as per I.S:456	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Special Concrete Introduction to ready mix concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	High performance concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Silica fume concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
12 <sup>th</sup>	1st	Shot-Crete concrete or gunitting	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Quiz Test	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Deterioration of concrete and its prevention, introduction	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Types of deterioration	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
13 <sup>th</sup>	1st	Prevention of concrete deterioration	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Corrosion of reinforcement	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Effects and prevention	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Repair technology for concrete structures Symptoms	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
14 <sup>th</sup>	1st	Cause and prevention of defect in concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2nd	Remedy of defects during construction	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3rd	Cracking of concrete due to different reasons	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4th	Repair of cracks for different purposes	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>

15 <sup>th</sup>	1 <sup>st</sup>	Selection of techniques	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	2 <sup>nd</sup>	Polymer based repairs,	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	3 <sup>rd</sup>	Common types of repairs of concrete	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>
	4 <sup>th</sup>	Previous year question paper discussion	<a href="https://archive.nptel.ac.in/courses/105/102/105102012/">https://archive.nptel.ac.in/courses/105/102/105102012/</a>